ACM International Collegiate Programming Contest in Egypt

Each year, the CTU Open Contest brings you a set of problems related to some common topic. However, the main reason of this competition is to select teams that will participate in following rounds, namely the Central Europe Regional Contest and possibly the World Finals, which will take place on Thursday, March 3^{rd}, 2011 in Sharm el-Sheikh, Egypt.

We want to select such teams that would perform best in those upcoming rounds. To meet this purpose, we have prepared a set of problems that you might possibly face if you advanced to the World Finals 2011 in Egypt. Those teams who solve the most of such problems will go there to solve them for real. It sounds fair, doesn't it?

Your programs can be written in C, C++, Pascal, or Java programming languages. The choice is yours but you will be fully responsible for the correctness and efficiency of your solutions. We need the correct answer produced in some appropriate time. Nothing else matters. You may choose any algorithm and any programming style.

All programs will read one single file from the standard input. The results will be written to the standard output. You are not allowed to use any other files, communicate over network, or create processes. Input and output formats are described in problem statements and must be strictly followed. If not specified otherwise, all input numbers and results will fit into a signed 32-bit integer type. Each text line (including the last one) should be always terminated by a newline character ("`\n`"), which is not considered to be a part of that line.

Good luck in the Czech Technical University Open Contest 2010. We hope you will enjoy it. And possibly, these virtual problems will soon turn into real ones.

The World Finals 2011 are waiting for you!

This problem set consists of ten sheets of paper (including this one) and contains nine problems. Please make sure that you have the complete set.